

WHAT IS CLAIMED IS:

1. A tool for metal cutting machining a surface in an opening, the tool comprising:

a cutter tip having at least one geometrically defined cutting edge;

5 two supporting regions in the tool for supporting the cutter tip, against which the cutter tip rests, and the supporting regions are oriented with respect to each other at an angle, the supporting regions also being so oriented that a line bisecting the angle between the supporting regions runs essentially perpendicular to an active one of the cutting edges, which is the edge that removes metal chips from the surface in the opening.

2. A tool for metal cutting machining a surface in an opening, the tool comprising:

a cutter tip having at least one geometrically defined cutting edge;

5 two supporting regions in the tool for supporting the cutter tip, the supporting regions having support surfaces against which the cutter tip rests, and the support surfaces of the supporting region are oriented with respect to each other at an angle, the supporting regions also being so oriented that a line bisecting the angle between the support surfaces runs essentially perpendicular to an active one of the cutting edges, which is the edge that removes metal chips from the surface in the opening.

3. The tool of claim 2, wherein the tool includes a main body and the supporting regions are formed in the main body.

4. The tool of claim 2, wherein the tool has a main body and respective inserts in the main body are positioned for defining the supporting regions.

5. The tool of claim 4, wherein the inserts are essentially rectangular cross section shaped elements.

6. The tool of claim 4, wherein the inserts are pin-shaped elements.

7. The tool of claim 4, wherein the main body is comprised of a material of a first hardness and the inserts are comprised of a material of a greater hardness than the hardness of the main body.

8. The tool of claim 7, wherein the inserts are of a material selected from at least one of the group consisting of metal carbide, ceramic and cubical boron nitride.

9. The tool of claim 2, wherein the main body is shaped to define clearances around the cutting tip at least in regions of the tool at the supporting regions for the cutting tip.

10. The tool of claim 1, further comprising a feed for at least one of coolant and lubricant located in the tool for feeding at least one of coolant and lubricant to the cutting edge.

11. The tool of claim 10, further comprising a clamping claw which holds the cutting tip to the supporting regions; and

the feed for at least one of coolant and lubricant is provided in the clamping claw.

12. The tool of claim 11, wherein the feed for at least one of coolant and lubricant includes an elongate coolant outlet in the claw, the outlet runs essentially parallel to the then active cutter edge.

13. The tool of claim 2, further comprising a clamping claw on the tool which holds the cutter tip to the supporting regions.

14. The tool of claim 2, wherein the cutter tip is an indexable tip.

15. The tool of claim 2, wherein the cutter tip is hexagonally shaped.

16. The tool of claim 2, wherein the cutter tip is tipped with cubical boron nitride.

17. The tool of claim 2, wherein the cutter tip has an external layer of cubical boron nitride for cutting purposes.

18. The tool of claim 2, wherein the cutter tip has a flank which includes regions of different angles of inclination.

19. The tool of claim 1, wherein the tool and the cutter tip thereof are both so shaped that the tool and the cutter tip are adapted for metal-cutting machining of valve seats in cylinder heads of internal combustion engines.

20. A method for metal cutting machining of a surface in an opening comprising operating a tool according to claim 1 at the surface in the opening to metal cut machine the surface, wherein the cutter tip is not required to be reset or adjusted when a respective active cutting edge thereof becomes worn.

21. The method of claim 20, further comprising displacing the tool in the direction of a central axis of the opening being machined during machining of the metal surrounding the opening.

22. The method of claim 20, wherein the cutter tip is an indexable tip.